

# PATENT ABSTRACTS OF JAPAN

(11)Publication number : **11-130266**  
 (43)Date of publication of application : **18.05.1999**

---

(51)Int.CI. **B65G 67/02**

---

(21)Application number : **09-300245** (71)Applicant : **HITACHI ZOSEN CORP**  
 (22)Date of filing : **31.10.1997** (72)Inventor : **MIYAWAKI KUNIO**  
**MAEKAWA MAKI**  
**HISAYASU AZUMA**

---

**(54) METHOD FOR DETECTING LOADED CONDITION OF CONTAINER BY  
 CARGO HANDLING DEVICE**

**(57)Abstract:**

PROBLEM TO BE SOLVED: To provide a method for detecting a loaded condition of containers by a cargo handling device, which accurately controls the cargo handling device by detecting the condition of a container group on a truck deck.



SOLUTION: The method for detecting a loaded condition of containers by a cargo handling device comprises the steps of, when a truck 2 enters an input port 1a provided as X-Y plane coordinate data beforehand, roughly moving a camera 10 installed on a traveling and laterally moving cargo handling device 4 to at least two corners opposed to each other on the entire upper surface of a container group based on an X-Y plane coordinate and, after a space part surrounded by the corners of four containers 3 is detected from the pictured images, determining each of the center coordinate of the space part, detecting the position of the entire group of containers by comparing there center coordinates with the X-Y plane coordinate. It further comprises the steps of, after detecting the number of pixels at the corners of four containers 3 in a specified area by aligning the center of the space part with the center of the pictured area, a distance to the corners of four containers 3 is determined for detection of the height of the container group.

---

**LEGAL STATUS**

[Date of request for examination] **29.03.2001**

[Date of sending the examiner's decision of  
 rejection]

[Kind of final disposal of application other than  
 the examiner's decision of rejection or  
 application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision  
 of rejection]

[Date of requesting appeal against examiner's  
 decision of rejection]

[Date of extinction of right]